

Amendments to the Claims:

This listing of claims replaces all prior versions and listings of claims in the application:

Listing of Claims:

1. (Previously Presented) A system for accessing a surgical target site, comprising:

a dilator system comprising a plurality of sequential dilators deliverable along a lateral, trans-psoas path to a targeted spinal site to create a distraction corridor;

a handle assembly including a first pivotable arm member, a second pivotable arm member that pivots relative to said first arm member in response to manual adjustment of a component of the handle assembly, and a translating member adapted to move longitudinally relative to said first and second arm members;

a first retractor blade having a generally concave inner-facing surface and being rigidly coupled to said first pivotable arm member prior to introduction toward the targeted spinal site, a second retractor blade having a generally concave inner-facing surface and being rigidly coupled to said second pivotable arm member prior to introduction toward the targeted spinal site, and a third retractor blade rigidly coupled to said translating member prior to introduction toward the targeted spinal site;

an intradiscal shim element that releasably mounts to the third retractor blade such that a maximum length of the intradiscal shim element extends generally parallel to a maximum length of the third retractor blade and a distal tip portion of the intradiscal shim element extends distally of the distal end of the third retractor blade, wherein the intradiscal shim element engages with a groove defined by the third retractor blade to penetrate into a spinal disc at the targeted spinal site when the intradiscal shim element is releasably mounted to the third retractor blade; and

said handle assembly being configured to simultaneously introduce said first, second and third retractor blades along the lateral, trans-psoas path toward the targeted spinal site in a closed position while the generally concave inner-facing surfaces of said first and second retractor

blades engage with an outermost dilator of the dilator system and thereafter opened by pivoting said first and second pivotable arm members relative to one another to create an operative corridor to said surgical target site.

2. (Previously Presented) The system of claim 1, further comprising a K-wire configured to be advance along the lateral, trans-psoas path to the targeted spinal site and engage an annulus of said spinal disc, the K-wire further configured to extend entirely through a dilator of said dilator system from the annulus of the spinal disc to a position beyond a proximal most end of the dilator system.

3. (Previously Presented) The system of claim 1, wherein the intradiscal shim element includes an extension of sufficient height to distract vertebral bodies adjacent to said spinal disc at the targeted spinal site when the intradiscal shim element is releasably mounted to the third retractor blade.

4. (Previously Presented) The system of claim 1, further comprising at least one retractor extender capable of being detachably engaged with at least one of said first and second retractor blades to prevent the ingress of adjacent tissue into said operative corridor after said first, second and third retractor blades have been opened.

5. (Previously Presented) The system of claim 1, wherein at least one of said plurality of sequential dilators is equipped with at least one stimulation electrode.

6. (Previously Presented) The system of claim 5, further comprising a control unit capable of electrically stimulating said at least one stimulation electrode, sensing a response of a nerve depolarized by said stimulation, determining at least one of proximity and direction between said at least one stimulation electrode and said depolarized nerve based upon the sensed response, and communicating said at least one of proximity and direction to a user.

7. (Previously Presented) The system of claim 6, further comprising an electrode configured to sense a neuromuscular response of a muscle coupled to said depolarized nerve, the electrode being operable to send the response to the control unit.

8. (Previously Presented) The system of claim 2, wherein said K-wire has a first stimulation electrode at a distal tip of the K-wire.

Claims 9-10. (Canceled)

11. (Previously Presented) The system of claim 6, further comprising at least one button for initiating the electrical stimulation from said control unit to said at least one stimulation electrode.

12. (Previously Presented) The system of claim 6, wherein the control unit comprises a display operable to display at least one of an electromyographic (EMG) response of said muscle coupled to said depolarized nerve and a stimulation threshold of said depolarized nerve.

13. (Previously Presented) The system of claim 6, wherein the control unit comprises a touch-screen display operable to receive commands from a user.

14. (Previously Presented) The system of claim 6, wherein at least one of said first, second and third retractor blades includes a stimulation electrode positioned near a distal end of said at least one of said first, second and third retractor blades.

Claims 15-19. (Canceled)

20. (Previously Presented) A surgical retractor system for accessing a surgical target site, comprising:

a handle assembly including first and second pivotable arm members and a translating member adapted to move longitudinally relative to said first and second arm members;

a first retractor blade coupled to said first arm member prior to introduction to a targeted spinal site and having a length sufficient to extend laterally to the targeted spinal site, a second retractor blade coupled to said second arm member prior to introduction to the targeted spinal site and having a length sufficient to extend laterally to the targeted spinal site, and a third retractor blade coupled to said translating member prior to introduction to the targeted spinal site and having a length sufficient to extend laterally to the targeted spinal site, said first, second, and third retractor blades defining a corridor extending from a proximal end of each retractor blade to a distal end of each retractor blade and between said retractor blades;

an intradiscal shim element that releasably mounts to a groove formed in the third retractor blade such that a distal tip portion of the intradiscal shim element extends distally of the distal end of the third retractor blade and penetrates into a spinal disc at the targeted spinal site when the intradiscal shim element is releasably mounted to the third retractor blade;

a first retractor extender element that releasably mounts to the first retractor blade such that a maximum length of the first retractor extender element extends generally parallel to a maximum length of the first retractor blade and a distal tip portion of the first retractor extender element extends distally of the distal end of the first retractor blade when the first retractor extender element is releasably mounted to the first retractor blade; and

said handle assembly being operable to pivot said first arm member and said second arm member and translate said translating member in a linear path relative said first and second arm members, thereby increasing the size of the corridor between said retractor blades to provide access to the targeted spinal site.

21. (Previously Presented) The surgical retractor system of claim 20, wherein said first retractor blade includes a pair of grooves for engagement with said first retractor extender element.

22. (Previously Presented) The surgical retractor system of claim 21, wherein at least one of said grooves is a dove-tail groove.

23. (Previously Presented) The surgical retractor system of claim 21, wherein at least a portion of said first retractor extender element slides down said first retractor blade within said pair of grooves.

24. (Previously Presented) The surgical retractor system of claim 20, wherein said intradiscal shim element includes an extension of sufficient height to distract vertebral bodies adjacent to said spinal disc at the targeted spinal site when the intradiscal shim element is releasably mounted to the third retractor blade.

25. (Previously Presented) The surgical retractor system of claim 24, wherein said intradiscal shim element fixes the position of said third blade relative to said targeted spinal site when said extension is adapted to penetrate into said spinal disc.

26. (Previously Presented) The surgical retractor system of claim 25, wherein said handle assembly and first, second, and third retractor blades are configured such that said third retractor blade can be fixed prior to enlarging said corridor and said first and second retractor blades move relative to said third retractor blade.

Claims 27-28. (Canceled)

29. (Previously Presented) The surgical system of claim 20, wherein said distal tip portion of said first retractor extender element includes a generally horizontal extension extending away from said corridor when said first retractor extender element is engaged with said first retractor blade.

30. (Previously Presented) The surgical retractor system of claim 20, further comprising at least one dilator advanceable to said targeted spinal site prior to said retractor blades and dimensioned to slidably receive said retractor blades thereabout to guide said retractor blades to said targeted spinal site.

31. (Previously Presented) The surgical retractor system of claim 20, wherein at least one of said first retractor blade, second retractor blade, and third retractor blade, is equipped to direct light to said targeted spinal site.

32. (Previously Presented) The surgical retractor system of claim 31, wherein at least one light cable extends along at least a portion of the length of at least one of said first retractor blade, second retractor blade, and third retractor blade.

33. (Previously Presented) The surgical retractor system of claim 30, wherein at least one of said dilator, first retractor blade, second retractor blade, and third retractor blade are equipped with at least one stimulation electrode.

34. (Previously Presented) The surgical retractor system of claim 20, further comprising a dilator system comprising a plurality of sequential dilators deliverable along a lateral, trans-psoas path to the targeted spinal site to create a distraction corridor, wherein said handle is configured to simultaneously introduce said first, second and third retractor blades along the lateral, trans-psoas path toward the targeted spinal site in a closed position while the first, second, and third retractor blades slidably engage with an outermost dilator of the dilator system.

35. (Previously Presented) The surgical retractor system of claim 34, wherein each of the plurality of sequential dilators includes a stimulation electrode at a distal region.

36. (Previously Presented) The surgical retractor system of claim 35, further comprising a K-wire dimensioned to extend through said plurality of sequential dilators and configured to be advanced to the targeted spinal site and to engage an annulus of said spinal disc at the targeted spinal site.

37. (Previously Presented) The surgical retractor system of claim 20, wherein the first retractor blade is rigidly coupled to said first arm member prior to introduction to the targeted spinal site, the second retractor blade is rigidly coupled to said second arm member prior to introduction to

the targeted spinal site, and the third retractor blade is rigidly coupled to said translating member prior to introduction to the targeted spinal site.

38. (Previously Presented) The surgical retractor system of claim 20, wherein the first retractor blade includes a generally concave inner-facing surface and a groove formed along the generally concave inner-facing surface.

39. (Previously Presented) The surgical retractor system of claim 38, wherein the first retractor extender element releasably mounts to the groove formed along the generally concave inner-facing surface of the of the first retractor blade groove.

40. (Previously Presented) The surgical retractor system of claim 20, wherein the third retractor blade includes a generally concave inner-facing surface and the groove of the third retractor blade is formed along the generally concave inner-facing surface.

41. (Previously Presented) The surgical retractor system of claim 40, wherein the intradiscal shim element includes at least one dovetail element to mate with the groove of the third retractor blade.

42. (Previously Presented) The surgical retractor system of claim 20, wherein the second retractor blade includes a generally concave inner-facing surface and a groove formed along the generally concave inner-facing surface.

43. (Previously Presented) The surgical retractor system of claim 42, further comprising a second retractor extender element that releasably mounts to the groove of the second retractor blade such that a maximum length of the second retractor extender element extends generally parallel to a maximum length of the second retractor blade and a distal tip portion of the second retractor extender element extends distally of the distal end of the second retractor blade when the second retractor extender element is releasably mounted to the second retractor blade.

44. (Previously Presented) The surgical retractor system of claim 20, wherein said handle is operable to simultaneously move said first arm member and said second arm member.

45. (Previously Presented) The surgical retractor system of claim 20, wherein said handle is operable to simultaneously move said first, second, and third retractor blades.

46. (Previously Presented) The surgical retractor system of claim 20, further comprising a shim insertion tool that releasably attaches to the intradiscal shim element during introduction of the intradiscal shim element toward the targeted spinal site.

47. (Previously Presented) The surgical retractor system of claim 20, further comprising a fiber optic cable for positioning within a wall of said first or second retractor blade to emit light toward the targeted spinal site.

48. (Previously Presented) The surgical retractor system of claim 20, wherein the handle assembly further includes a locking mechanism to selectively lock at least the first arm member in a retracted position such that the first retractor blade is spaced apart from the second retractor blade.

49. (Previously Presented) The surgical retractor system of claim 20, wherein the handle assembly is operable to move said first arm member and said second arm member thereby increasing the size of the corridor between said first, second, and third retractor blades such that an implant is deliverable through the corridor to the targeted spinal site.

50. (Previously Presented) The system of claim 1, wherein each of the plurality of sequential dilators includes a stimulation electrode at a distal region.

51. (Currently Amended) The system of claim 50 ~~claim 48~~, further comprising a K-wire configured to be advanced to the targeted spinal site and to engage an annulus of said spinal disc



at the targeted spinal site, wherein at least one of the plurality of sequential dilators are deliverable over the K-wire.

52. (Previously Presented) The system of claim 1, wherein the first retractor blade includes a groove formed along said generally concave inner-facing surface of the first retractor blade.

53. (Currently Amended) The system of claim 52 ~~claim 50~~, further comprising a first retractor extender element that releasably mounts to the groove of the first retractor blade such that a maximum length of the first retractor extender element extends generally parallel to a maximum length of the first retractor blade and a distal tip portion of the first retractor extender element extends distally of the distal end of the first retractor blade when the first retractor extender element is releasably mounted to the first retractor blade.

54. (Previously Presented) The system of claim 1, wherein the third retractor blade includes a generally concave inner-facing surface and the groove of the third retractor blade is formed along the generally concave inner-facing surface.

55. (Currently Amended) The system of claim 54 ~~claim 52~~, wherein the intradiscal shim element includes at least one dovetail element to mate with the groove of the third retractor blade.

56. (Previously Presented) The system of claim 1, wherein the second retractor blade includes a groove formed along said generally concave inner-facing surface of the second retractor blade.

57. (Currently Amended) The system of claim 56 ~~claim 54~~, further comprising a second retractor extender element that releasably mounts to the groove of the second retractor blade such that a maximum length of the second retractor extender element extends generally parallel to a maximum length of the second retractor blade and a distal tip portion of the second retractor extender element extends distally of the distal end of the second retractor blade when the second retractor extender element is releasably mounted to the second retractor blade.

58. (Previously Presented) The system of claim 1, wherein said handle is configured to simultaneously move said first arm member and said second arm member.

59. (Previously Presented) The system of claim 1, wherein the first and second retractor blades simultaneously move when the handle assembly moves the first, second, and third retractor blades to the open position.

60. (Previously Presented) The system of claim 1, wherein said handle is configured to simultaneously move the first, second, and third retractor blades.

61. (Previously Presented) The system of claim 1, further comprising a shim insertion tool that releasably attaches to the intradiscal shim element during introduction of the intradiscal shim element toward the targeted spinal site.

62. (Previously Presented) The system of claim 1, further comprising a fiber optic cable for positioning within a wall of said first or second retractor blade to emit light toward the targeted spinal site.

63. (Previously Presented) The system of claim 1, wherein the handle assembly further includes a locking mechanism to selectively lock at least the first arm member in a retracted position such that the first retractor blade is spaced apart from the second retractor blade.

64. (Previously Presented) The system of claim 1, wherein the first, second, and third retractor blades define an operative corridor to the targeted spinal site when moved to the opened position such that an implant is deliverable through the operative corridor to the targeted spinal site.

65. (Previously Presented) The system of claim 7, wherein the control unit extracts characteristic information from the response detected by said electrode to determine at least one of proximity and direction between said at least one stimulation electrode and said depolarized nerve.

66. (Currently Amended) The system of claim 65 ~~claim 63~~, wherein the characteristic information includes a stimulation current threshold and said control unit displays the value of said stimulation current threshold.